

no doubt be routinely available in anthropology department libraries. What is needed for anthropology is sensitizing to the hazards that are likely to be encountered, systematic sharing of experiences with hazards in the field, the best available advice on prevention and response when they are encountered, and some mental rehearsals of what to do under those circumstances. The present data, and their fuller presentation within the next year, will provide a contribution to that process.

Rates of accidents and illnesses may be higher or lower for North American anthropologists than for others who may do fieldwork in the same areas but live and work in areas of the world outside North America. Differences in rates of accidents and illnesses may be due to differences in resistance to disease and in knowledge of the sources of risk or to differences in funding and organization of research that either increase or decrease the amount of risk or provide more or less equipment and training to deal with risks when they appear. Such questions can be resolved by comparative work on other countries or areas. Colleagues who would be interested in replication of the North American research in other areas are invited to write for copies of the questionnaire forms and study design.

Teaching Anthropology and Critical Thinking with the Question "Is There Something Big Afoot?"¹

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A course exploring the notion of whether Bigfoot, the sasquatch, the yeti, or any such bipedal, hairy manlike monster might really exist can be an excellent opportunity to teach anthropology and critical thinking to students who are in desperate need of such instruction. In response to student interest, I have occasionally taught such a class and have found that the examination of the claims of those for whom Bigfoot-like creatures are real can involve evolutionary theory, primate anatomy, ecology, paleontology, and the history and philosophy of science, as well as cross-cultural consideration of religion, folklore, and myth. In a course entitled "Bigfoot and Other Monsters: Myth or Reality?" I review much of the evidence offered in support of the existence of such monsters (see, e.g., Bayanov and Burtsev 1976, Napier 1972, Porshnev 1974, Sanderson 1961, Shackley 1983, and the bibliographies in Halpin and Ames 1980 and Markotic and Krantz 1984). Stories of sightings, purported photo-

graphs, films, and recorded sounds are considered, as is physical evidence alleged to represent the creature such as blood, hair, guts, feces, and the classic footprints, or casts of them. Discussion of this evidence focuses on alternative explanations for it, and it becomes apparent that it can all be rejected in favor of some explanation that does not violate Occam's Razor. The class provides a platform from which to extol the virtues of critical thinking as well as introducing students to the subject of anthropology. I point out that, because the proof of a negative is difficult, the burden of proof falls upon those who believe creatures such as Bigfoot exist. I stress that science requires reproducible results and therefore the only indisputable evidence of these creatures' existence will be the capture of one.

Though all the claims concerning the existence of such creatures present opportunities for training in critical thinking, some are particularly intriguing because of their absurdity. For example, Beckjord (n.d.) has calculated that the sasquatch may weigh 1,224–4,284 lb., with a likely average of 2,448. Moreover, he has suggested that the animal may be capable of appearing and disappearing at will and that this quality may be due to an as yet undiscovered physical principle, perhaps related to an extraterrestrial origin (Beckjord, personal communication, February 20, 1981). With Beckjord, Butler (1984) suggests that these creatures may possess special abilities that assist them in avoiding capture. Specifically, he contends that they may have higher (one could suggest extraordinary) sensory perception. Speculations like these present an interesting dilemma for science, since it might be argued that failure to capture the creature is simply evidence that it does indeed possess such abilities. When this point is made students frequently need to be shown that this dilemma exists only because it is assumed that the creature is real, which is clearly inappropriate since its reality is what is in question.

Other claims are interesting because they come from trained observers (Gill 1980; Krantz 1971, 1972a, b; Markotic and Krantz 1984). Gill, for example, a Diplomate of the American Board of Forensic Anthropology and a past President of the Physical Anthropology Section of the American Academy of Forensic Sciences, reports that his investigation of the size and color of these creatures, as determined from a selection of reports by various observers, suggests that they conform to the ecogeographical distribution of such traits represented by Bergmann's and Gloger's rules. He states that, assuming that his statistical analysis is correct, there can only be two explanations: "1. that the most complex and sophisticated hoax in the history of anthropology has continued for centuries without being exposed; 2. that the most manlike (and largest) non-human primate on earth has managed to survive in parts of North America and remains undiscovered by modern science" (Gill 1980:272). There are, of course, alternative explanations, not the least of which concerns the source of the data, all collected unsystematically by untrained observers under what must be recognized as variable, and generally primitive, conditions over an extended period of time.

Thus, while Gill is willing to assume "that random data have not fortuitously produced the meaningful results" (p. 272), in the absence of the creature's discovery that is but one of the assumptions that demands careful scrutiny.

Krantz, a well-known physical anthropologist and scientist amongst those who accept the animal as real, has measured several purported footprints of the creature and tried to make a science of estimating its stature, weight, and strength. He has identified such similarities among sasquatch footprints as a large, wide heel, what is called a double ball, and a straight row of similar-sized toes. Indeed, he has suggested that the creature's foot is unique for various features that reflect adaptations to carrying a heavy body on a pair of legs evolved for bipedality (1972a). In my discussion of Krantz's work, I review what some (e.g., Napier 1972, Gill 1980, Shackley 1983) have considered the most convincing argument for the creature's existence: that the foot Krantz has reconstructed from a series of 1,089 tracks discovered near Bossburg, Washington, would be difficult if not impossible to fake. Specifically, Krantz argues that the prints are those of an animal with a crippled right foot and that they reflect a degree of anatomical correctness unlikely to be achieved by the would-be perpetrator of a hoax (1972a). While this argument may appear convincing to those unfamiliar with the need for skepticism in science in general or with foot anatomy in particular, a review of any textbook on orthopedic surgery reveals that there are a number of ways for a foot to be crippled, ranging from various kinds of congenital clubfoot to lameness of various kinds as the result of an accident (Apley 1977, Shands, Raney, and Brashear 1963). According to Napier (1972), the animal's lameness in this case may be talipes equinovarus, a common form of clubfoot—a diagnosis derived from a consensus after "photos of the Bossburg footprints" were "submitted to two eminent British orthopaedic surgeons, who as well as expressing their view, consulted a number of their colleagues" (1972:228).² Polygenetic factors are believed to play a large role in producing the disorder, although environmental factors such as poliomyelitis and other conditions that might produce myopathies and neuropathies (e.g., spina bifida and arthrogryposis multiplex congenita) are at times found in association with it. As a result, there is extensive variation among those who have this infirmity, the one general similarity recognized being an adult foot that is short and stubby with its anterior half medially adducted (Apley 1977, Shands et al. 1963).³ Thus, almost any type of unusual footprint might suggest an analogously deformed or crippled human foot. Furthermore, though Krantz describes the forepart of the right foot as being turned inward about 30°, he also states that both right and left footprints measure about 17 inches in length and that the heel of each is well defined. Thus, while the condition of adduction

or inward orientation of the forefoot may be met, that of a short, stubby foot is not. That the heel is well defined causes Napier to doubt that this is indeed a case of talipes equinovarus, since in this condition only the forefoot and toes touch the ground in normal standing (1972:124). Rather, he suggests that the lameness might be due to a crushing injury to the foot in childhood. This raises the question whether a foot deformed by injury will necessarily appear as Krantz has suggested it does in his attempted reconstruction. There is good evidence that it will not, for, as I have said earlier, a great degree of variation in lameness due to injury has been documented. There is no reason to believe that the Bossburg tracks would have required any greater understanding of anatomy on the part of a hoaxer than other tracks, some of which have been identified as hoaxes by the perpetrators (Dennett 1982).

According to Begley (1987), Krantz now possesses casts that he again suggests contain details beyond the capabilities of a hoaxer to produce. Specifically, some of the new casts are said to possess dermal ridges and hard-to-fake microscopic anatomical details such as sweat pores. As Wilson (1987) points out, however, such details would be easy to fake, requiring only that a latex or silicone mold of a foot be soaked in kerosene. Thus exposed, the mold could nearly double in size and still contain all its fine detail, which could then be transferred to a cast taken from it (Diane L. France, personal communication, 1988).

In answer to the question posed in the title of this report, I am inclined to say that there is most certainly something big afoot. Rather than being a heretofore undocumented species roaming the remote regions of the world, however, it is the well-documented lack of critical thinking amongst members of the species *Homo sapiens*. That this lack affords anthropologists an interesting teaching opportunity is an understatement.

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2. One is forced to wonder who these surgeons were, for Napier does not give their names.

3. Napier appears to accept this general feature of talipes equinovarus (p. 124).

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Serials

■ The new journal *MAST* aims to provide an international platform for maritime anthropological research. It will focus primarily on fishing and fishing communities, but the editors welcome papers dealing with other maritime occupational categories such as seamen, oil-rig crews, divers, and bargemen. The first number contains an article by Reginald Byron on Shetland fishing crews, one by James M. Acheson on the fishing industry in Maine and one by John J. Poggie and Richard B. Pollnac on the fishing industry in New England, and theoretical studies by Gisli Palsson and M. Estellie Smith. The journal will be published twice a year by the Department of European and Mediterranean Studies of the University of Amsterdam. Correspondence should be addressed to Euromed/MAST, Anthropological-Sociological Centre, University of Amsterdam, O.Z. Achterburgwal 185, 1012 DK Amsterdam, The Netherlands.

■ The inaugural number of *African Languages and Cultures*, a new biannual produced by members of the

Department of African Languages and Cultures of the School of Oriental and African Studies, University of London, in association with the London University Centre for African Studies, contains articles by B. W. Andrzejewski on infills in Somali oral poetry, by D. L. Appleyard on a definite article in Xamtanga, by Colin Flight on Bantu trees, by Graham Furniss on money, marriage, and the young in modern Hausa poetry, by John Picton on Ebira reflexions on the energies of women, and by R. J. Sim on violations of the "two-consonant constraint" in Hadiyya. Contributions of specialist interest in African descriptive and comparative linguistics and cultural studies including, for example, African-language literatures, African writing in metropolitan languages, and African art and music should be sent to the Editor at the School of Oriental and African Studies, Malet St., London WC1E 7HP, England. Subscriptions, at £10 per annum (surface mail; for air mail add £3) payable in sterling only, should be sent to ALC Subscriptions, The Publications Officer, at the same address.